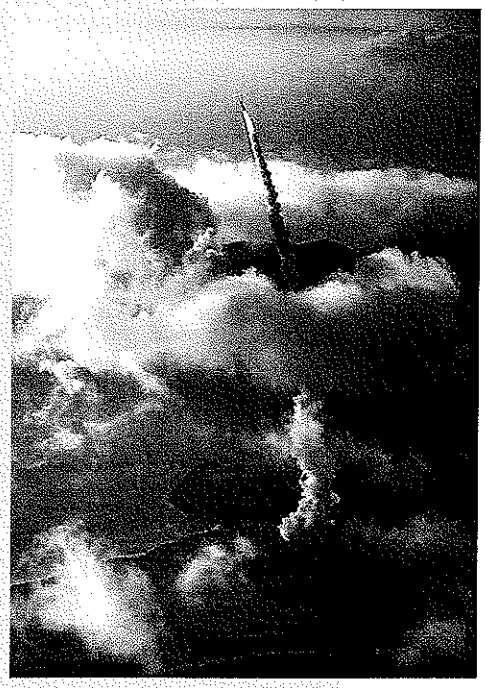

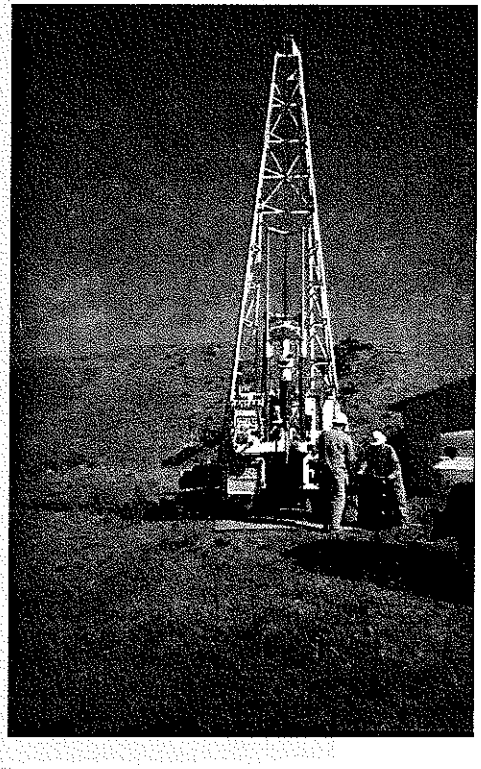

VANDENBERG AIR FORCE BASE

Final
Record of Decision and
Remedial Action Plan for Site 18

UNITED STATES AIR FORCE

30th Space Wing Division

June 2004

MWH

FINAL

RECORD OF DECISION AND REMEDIAL ACTION PLAN
SITE 18

VANDENBERG AIR FORCE BASE, CALIFORNIA

Prepared for:

Air Force Center for Environmental Excellence
and
Vandenberg Air Force Base, California

Prepared by:

MWH
1035 Santa Barbara Street, Suite 8
Santa Barbara, California 93101

June 2004

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ACRONYMS AND ABBREVIATIONS

µg/kg	micrograms per kilogram
µg/L	micrograms per liter
30 CES/CEVR	Vandenberg Environmental Management Flight
bgs	below ground surface
BTV	background threshold values
CAB	Community Advisory Board
CCR	California Code of Regulations
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CMECC	California Military Environmental Coordination Committee
DTSC	Department of Toxic Substances Control
FFS	focused feasibility study
FFSRA	Federal Facilities Site Remediation Agreement
GIS	geographic information system
IRP	Installation Restoration Program
Jacobs	Jacobs Engineering Group Inc.
mg/kg	milligrams per kilogram
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
O&M	operation and maintenance
PCBs	polychlorinated biphenyls
PRG	preliminary remediation goal
PVC	polyvinyl chloride
RAO	remedial action objective
RAP	Remedial Action Plan
RI	Remedial Investigation
ROD	Record of Decision
RWQCB	California Regional Water Quality Control Board
SAIC	Science Applications International Corporation
SVOC	semivolatile organic compound
TRPH	total recoverable petroleum hydrocarbons
USEPA	U. S. Environmental Protection Agency
UXO	unexploded ordnance
VAFB	Vandenberg Air Force Base
VOC	volatile organic compound

1.0 DECLARATION

1.1 SITE NAME AND LOCATION

Vandenberg Air Force Base
Site 18
Santa Barbara County, CA

1.2 STATEMENT OF BASIS AND PURPOSE

This decision document, a Record of Decision and Remedial Action Plan (ROD/RAP) has been prepared to present the selected remedy for Site 18, Landfill 3/4 at Vandenberg Air Force Base (VAFB) to satisfy the legal requirements of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). The ROD is the decision document under the CERCLA process, whereas the RAP is the decision document under the California Health and Safety Code (Section 25356.1). This decision is based on the Administrative Record for this site and complies with 40 Code of Federal Regulations (CFR), Part 300. The format of this ROD/RAP is consistent with the non-binding guidance provided in the U.S. Environmental Protection Agency's (USEPA) *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Documents* (USEPA, 1999).

The purpose of this ROD/RAP is to set forth the remedial actions to be conducted at Site 18 that were presented in the Site 18, Landfill 3/4, Final Focused Feasibility Study (FFS) Report (Jacobs Engineering Group Inc. [Jacobs], 1998), and to document the selection of remedial objectives and essential actions, to include essential Engineering Controls (ECs) and Institutional Controls (ICs) as the selected remedy for Site 18.

The United States Air Force, the Department of Toxic Substances Control (DTSC) of the California Environmental Protection Agency, and the State of California Regional Water Quality Control Board (RWQCB), Central Coast Region, concur with the selected remedy.

1.3 ASSESSMENT OF THE SITE

The response action selected in the ROD/RAP is necessary to protect the public health and welfare and the environment from actual or threatened releases of pollutants or contaminants to the environment.

1.4 DESCRIPTION OF THE SELECTED REMEDY

Based on alternatives evaluated in the FFS (Jacobs, 1998), Alternative 2, Engineering and Institutional Controls, has been selected as the preferred remedy at Site 18. This alternative would include restricting site access and future development. Because of potential unexploded ordnance (UXO), only screening level data were collected within the site boundaries. Therefore, risks to future on-site receptors are uncertain and will be reassessed later when technology develops and/or through continual water monitoring results. Institutional controls are necessary at Site 18 to restrict access to and prevent potential development of the site area that may be incompatible with the past site use as a base landfill.

The selected remedy consists of the following:

- The VAFB General Plan will be amended to record the land use designations and restrictions.
- The boundaries of the site will be defined in the VAFB Geographical Information System (GIS).
- Five signs will be posted at regular intervals around the site boundary to warn potential site visitors and to define Site 18 boundaries (Figure 2-3).
- Monitoring wells 18-MW-4, 18-MW-5 and 18-MW-6, at or near the site, will be monitored at least once every five years for contaminants of concern.
- Appropriate regulatory agencies will be notified of proposed land use changes that are inconsistent with the use restrictions and assumptions described herein or property interest transfers in accordance with CERCLA §120(h).
- Conduct a protectiveness review and generate a report every five years to document site status and report land use changes.

- Vandenberg Environmental Management Flight, Restoration (30 CES/CEVR) will be responsible for administering all necessary remedial actions, to include the Site 18 institutional controls.

1.5 ROD DATA CERTIFICATION CHECKLIST

The following information is included in the Decision Summary of this ROD/RAP. Additional information can be found in the Administrative Record file for this site.

- Chemicals of concern and their respective concentrations – Page 2-4 to 2-7.
- Baseline risk represented by the chemicals of concern – Page 2-8 to 2-9.
- How materials constituting principal threats are addressed – Page 2-15.
- Current and reasonably anticipated future land use – Page 2-8.
- Estimated capital, annual operations and maintenance (O&M), and total present value costs – Page 2-18 to 2-19.
- Key factors that led to selecting the remedy – Page 2-12 to 2-13.
- A description of the selected remedy – Pages 2-16.

1.6 STATUTORY DETERMINATIONS

The selected remedy is protective of human health and the environment, complies with federal and state requirements that are legally applicable or relevant and appropriate to the remedial action, is cost-effective, and utilizes permanent solutions and alternative treatment or resource recovery technologies to the maximum extent practicable. This remedy uses institutional controls to restrict access to potentially affected media and to prevent any site use that may not be compatible with past site activities.

The remedy for Site 18 does not satisfy the statutory preference for treatment as a principal element of the remedy because due to the potential presence of UXO on the site, no deep soil samples could be collected within the boundaries of the landfill. Therefore no contaminants have been identified at Site 18 that require treatment.

Because this remedy will result in potential contaminants remaining on site above levels that will allow for unlimited use and unrestricted exposure, reviews will be conducted in accordance with

CERCLA §121(c) and the National Contingency Plan (40 CFR §§ 300.430(f)(4)(ii) and 300.430(f)(5)(iii)(C)) at least every five years after commencement of the remedial action to assure that the remedy continues to provide adequate protection of human health and the environment.

1.7 AUTHORIZING SIGNATURES

The undersigned authorized representatives concur with the Record of Decision for the Selected Remedy at Site 18, Landfill 3/4, Vandenberg Air Force Base, California.

1.7.1 Signature for the Air Force

Signature: _____ **Date:** 2 Jun 04

L. DEAN FOX, Maj Gen, USAF
The Civil Engineer
DCS/Installations & Logistics

1.7.2 Signature for the DTSC

Signature: _____ **Date:** 4/8/04

John E. Scandura, Chief
Southern California Operations
Office of Military Facilities
Department of Toxic Substances Control
California Environmental Protection Agency

1.7.3 Signature for the RWQCB

Signature: _____ **Date:** 4-6-04

Roger W. Briggs
Executive Officer
California Regional Water Quality Control Board
Central Coast Region

2.0 DECISION SUMMARY

2.1 SITE NAME, LOCATION AND BRIEF DESCRIPTION

Site 18 is located on Vandenberg Air Force Base in Santa Barbara County, California. Site 18 is in South Vandenberg on the eastern edge of Lompoc Terrace, south of the Santa Ynez River and west of Lompoc Canyon (Figure 2-1). The site is immediately east of Manzanita Road, approximately 3,000 feet south of Mesa Road, and covers approximately 2 acres (Figure 2-2). Site 18 was used as a Base Landfill (Landfill 3/4), from the mid-1960s to the early 1970s, primarily for the disposal of construction waste. No buildings are present within the site boundaries. The site is presently covered with soil and natural vegetation.

Cleanup of Installation Restoration Program (IRP) sites at VAFB is conducted in accordance with a signed Federal Facilities Site Remediation Agreement (FFSRA), which was negotiated with and is overseen by the California DTSC, the lead oversight agency, and the California RWQCB, the support agency. The FFSRA ensures full cooperation between the Air Force and the oversight agencies to accelerate and streamline the remediation process at VAFB, to the maximum extent possible, consistent with applicable state and federal laws.

2.2 SITE HISTORY AND ENFORCEMENT ACTIVITIES

Disposal operations at Site 18 started in the mid to late 1960s. Materials disposed of at the site included primarily construction debris from a launch complex and power plant. Visual inspections of the site indicate that surface debris, including asphalt, broken wooden pallets, and pieces of polyvinyl chloride (PVC) piping, have been deposited. A records search indicates that radioactive materials were not used, stored, or disposed of at the site. This records search is documented in an RI report dated 14 April 1997 (Jacobs, 1997).

Site 18 was investigated under the IRP at VAFB as part of the basewide program to investigate hazardous waste sites for their potential impact to human health and the environment. The RI

was conducted in accordance with a work plan approved by the DTSC and the RWQCB. Investigation activities conducted for Site 18 included the following: records search and interviews, aerial photograph review, well inventory, soil gas survey, geophysical survey, soil and groundwater sampling, and data analyses and validation (Jacobs, 1997). By letter dated 10 March 1997, both the DTSC and RWQCB concurred with the recommendation for no further investigation at Site 18. There have not been any enforcement activities at this site.

2.3 COMMUNITY PARTICIPATION

The review process for the ROD/RAP is the means by which the public may provide input into the decision-making process and is a critical component of the remedy selection process.

The ROD/RAP was submitted to the VAFB Community Advisory Board (CAB) for review. Comments were provided by the CAB and are included in the Responsiveness Summary, which is Section 3.0 of this ROD/RAP.

30 CES/CEVR issued a fact sheet in August 2002 and distributed it to key community leaders, information repositories, and interested parties. An announcement of the ROD/RAP availability for public review was made on September 1, 2002 in the Lompoc Record and the Santa Maria Times.

The ROD/RAP was submitted for public review and comment for a period of one month. The public review and comment period began September 3, 2002 and extended through October 2, 2002. No public comments were submitted during the public comment period.

In addition, a public meeting was conducted on September 12, 2002. A briefing on the proposed plan was presented and a formal oral comment period was made available for those who wanted to voice their comments. A transcript of the public hearing proceedings is included in the Responsiveness Summary.

2.4 SCOPE AND ROLE OF OPERABLE UNIT OR RESPONSE ACTION

This ROD/RAP addresses potential soil and groundwater contamination at a former landfill. Site 18 was investigated under the IRP at VAFB as part of the basewide program to investigate hazardous waste sites for their potential impact to human health and the environment. A RI was conducted and a report was prepared documenting the field activities and sampling results (Jacobs, 1997). By letter dated 10 March 1997, both the DTSC and the RWQCB concurred with the recommendation for no further investigation at Site 18. Although no active responses are warranted at Site 18, its historical use as a landfill means that a potential exists for UXO within the landfill boundaries. Therefore, the Institutional Controls alternative was chosen to restrict the site from future development that might be incompatible with its past landfill use.

2.5 SITE CHARACTERISTICS

A number of investigation activities have been conducted for the Site 18 RI including the following: records search and interviews, aerial photograph review, well inventory, geophysical survey, and soil gas survey. Data collected in an earlier investigation by Science Applications International Corporation (SAIC) was also reviewed by Jacobs for use in the RI. SAIC collected subsurface soil samples from four deep borings outside the site boundaries and from five shallow borings, three of which were on or within the boundaries of Site 18. Jacobs used the SAIC data for screening purposes only because the data did not meet data quality objectives for risk assessment. Analysis of SAIC's data revealed low concentrations of metals in soil and groundwater samples. Total recoverable petroleum hydrocarbons (TRPH) was also detected in a shallow soil sample collected outside the site boundaries.

Based on the results of the records search and interviews, it was determined that only construction debris was reported to have been disposed of at Site 18. There is no direct evidence that UXO has been disposed of at Site 18. However, there is some uncertainty in the disposal records for all landfills of this era. Therefore, the potential for UXO disposal exists. By reviewing historical aerial photographs and conducting the geophysical survey, Jacobs reduced

the extent of the landfill significantly compared with the boundaries previously estimated by SAIC (1990).

In addition to the historical review, Jacobs advanced four soil borings on or near the landfill perimeter. Three of the borings were converted to groundwater monitoring wells (18-MW-4, 18-MW-5 and 18-MW-6). These wells were sampled along with three previously existing wells (18-MW-1, 18-MW-2 and 18-MW-3) located in Lompoc Canyon approximately 2,400 feet downgradient from Site 18. Due to the potential presence of UXO at any VAFB landfill, deep soil borings could not be advanced directly within the landfill boundaries at Site 18; however, one angle boring was advanced to sample beneath the landfill. Detailed discussions of the sampling rationale and analytical results are presented in the RI Report for Site 18 (Jacobs, 1997). Brief summaries of the findings of the soil and groundwater investigations are presented in the following sections. Jacobs' RI soil and groundwater sample locations are shown on Figure 2-2.

2.5.1 Findings of Site 18 Soil Investigation

Jacobs advanced four borings outside the landfill boundaries. Three of these borings were deep soil borings, which were sampled and then converted to groundwater monitoring wells (18-MW-4, 18-MW-5 and 18-MW-6). The fourth boring was an angle boring (18-JB-1), which was advanced at an angle of 30 degrees from vertical to sample beneath landfill material. Groundwater was encountered at depths of more than 200 feet below ground surface (bgs). Soil and groundwater samples were collected and data analysis and validation was performed (Jacobs, 1997). Soil samples were analyzed for metals, volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), TRPH, polychlorinated biphenyls (PCBs) and organochlorine and organophosphorus pesticides. No VOCs, SVOCs, PCBs or pesticides were detected in the soil samples. Inorganic detections above background threshold values (BTVs) but below action levels and all organic detections are reported in Table 2-1.

2.5.1.1 Metals

No metals above background threshold concentrations were detected in the shallow soil samples (0-10 feet bgs) collected from the four borings. Barium, copper, and nickel were reported above background in soil samples collected from 50 to 225 feet bgs (Table 2-1). However, all detected concentrations were only slightly higher than background, and were significantly lower than residential preliminary remediation goals (PRGs). It can be concluded that the metals concentrations likely represent natural soil variations.

2.5.1.2 Total Recoverable Petroleum Hydrocarbons

TRPH was only detected in Boring 18-MW-5 in samples collected from 85 to 86 feet bgs and 224 to 226 feet bgs at 15.2 and 32.7 mg/kg, respectively (Table 2-1). These results are well below the leaking underground fuel tank (LUFT) action level of 100 mg/kg. TRPH was not detected in the shallow soil samples collected from 18-MW-5 (Jacobs, 1998).

TABLE 2-1
CHEMICALS DETECTED IN SOIL

Analyte	BTV* (mg/kg)	Action Level** (mg/kg)	Boring Identification	Sample Depth (feet bgs)	Detected Concentration (mg/kg)
Barium	35	5,400 (PRG)	18-MW-4	50.0 to 51.0	36.7
			18-MW-5	225.0 to 226.0	43.7
Copper	37	3100 (PRG)	18-MW-5	125.0 to 126.0	38.8
Nickel	10	1600 (PRG)	18-MW-4	50.0 to 51.0	14.3
			18-MW-5	125.0 to 126.0	12.8
				225.0 to 226.0	10.5
			18-MW-6	205.0 to 206.0	13
			18-JB-1	50.0 to 52.0	11.3
TRPH		100 (LUFT)	18-MW-5	85.0 to 86.0	15.2
				225.0 to 226.0	32.7

bgs – below ground surface
mg/kg – milligrams per kilogram
*BTV for subsurface dune sand.
**PRG: USEPA, 2001 Region IX Preliminary Remediation Goals (PRGs).
LUFT – LUFT Task Force, 1989 California Leaking Underground Fuel Tank (LUFT) Field Manual.

2.5.2 Findings of Site 18 Groundwater Investigation

Groundwater samples were collected from six monitoring wells at Site 18. Three monitoring wells were located adjacent to the site boundaries (one upgradient and two downgradient), and three were in Lompoc Canyon approximately 2,400 feet downgradient from Site 18 (Figure 2-2). Groundwater samples were analyzed for metals, VOCs, SVOCs, TRPH, fluoride, PCBs, organochlorine pesticides and organophosphorus pesticides. No organic or inorganic compounds were detected in groundwater samples collected from 18-MW-1, 18-MW-2 or 18-MW-3. No VOCs, fluoride, PCBs or pesticides were detected in the groundwater samples. Inorganic compounds detected above BTVs and all reported organic compounds are included on Table 2-2.

2.5.2.1 Metals

Zinc was the only metal detected above BTVs. It was detected in the three groundwater samples collected from 18-MW-4, -5 and -6 at concentrations of 200 µg/L, 200 µg/L and 350 µg/L respectively (Table 2-2). Although the detected concentrations are well above the BTV of 80 µg/L, the concentrations from the wells downgradient of the site do not differ significantly from the concentrations detected in the upgradient well (18-MW-4). Additionally, all concentrations are well below the action level for zinc.

2.5.2.2 Total Recoverable Petroleum Hydrocarbons

TRPH was detected in low concentrations in the groundwater samples collected from 18-MW-4, -5 and –6 (Table 2-2). The concentrations reported were well below the LUFT action level of 1,000 µg/L. Since these wells were completed approximately 250 feet bgs, it is unlikely that these detections are the result of contaminant releases from the fill area.

2.5.2.3 Semivolatile Organic Compounds

Bis(2-ethylhexyl)pthalate, a common laboratory or field contaminant, was the only SVOC reported during the groundwater sampling event. This compound was reported in a sample collected from 18-MW-4 at a concentration of 78 µg/L, which exceeded the residential PRG of

4.8 µg/L. Because 18-MW-4 is located upgradient of the fill area, it is unlikely that the contaminant is site related.

Another groundwater sample was collected from 18-MW-4 during the supplemental RI activities in June 1995 to confirm the earlier detections of bis(2-ethylhexyl)pthalate. Bis(2-ethylhexyl)pthalate was not detected in the groundwater sample.

Because 18-MW-4 is an upgradient well, the compound is a common field and laboratory contaminant, and the presence of the compound could not be confirmed, bis(2-ethylhexyl)pthalate is not considered a site contaminant of potential concern.

TABLE 2-2
CHEMICALS DETECTED IN GROUNDWATER

Analyte	BTV* (µg/L)	Action Level** (µg/L)	Well Identification	Detected Concentration (µg/L)
Zinc	80	5000 (LUFT)	18-MW-4	200
			18-MW-5	200
			18-MW-6	350
TRPH		1000 (LUFT)	18-MW-4	570
			18-MW-5	160
			18-MW-6	240
bis (2-ethylhexyl) pthalate		4.8 (PRG)	18-MW-4	78

µg/L – micrograms per liter
*BTV for groundwater
**PRG: USEPA, 2001. Region IX Preliminary Remediation Goals (PRGs).
LUFT: LUFT Task Force, 1989. California Leaking Underground Fuel Tank (LUFT) Field Manual.

2.5.3 Findings of Site 18 Soil Gas Survey

The results of the soil gas survey conducted at Site 18 did not show the presence of landfill gas, nor were any VOCs detected in soil gas samples collected.

2.6 CURRENT AND POTENTIAL FUTURE LAND AND WATER USES

Site 18 is currently unused and located in an undeveloped area on South Base that is covered by coastal sage scrub. The VAFB GIS land use layer currently classifies the present and future land use as undefined open space. "Open space" means "undeveloped space," and examples of permissible uses on land classified as open space include, but are not limited to, conservation areas, forest stands, grazing areas, and required buffer space. Examples of impermissible uses include, but are not limited to, ground-disturbing activities and recreational areas.

The results of the RI indicate that groundwater downgradient of Site 18 has not been impacted. There are no potable water wells at Site 18 and there are currently no plans to use groundwater at Site 18 for potable purposes.

2.7 SUMMARY OF SITE RISKS

A study of records indicates that materials disposed of at the site include primarily construction debris. The site boundaries were walked and the site was visually inspected. Additionally, aerial photographs of the site were studied. These visual inspections of the site indicated surface debris, including asphalt, broken wooden pallets, and pieces of PVC piping. Due to the potential presence of UXO, no deep soil borings could be advanced directly within the landfill boundaries at Site 18; however, an angle boring was advanced to sample beneath the landfill (Jacobs, 1997). A potential still exists for unknown substances/materials to exist below the surface at Site 18 that may create a risk should the land use change in the future.

Screening data (shallow soil samples) collected within the boundaries (SAIC, 1990), deep soil borings at or near the perimeter, and the angle boring extending beneath the landfill (Jacobs, 1997) adequately characterized the site. Perimeter wells were also installed to monitor any potential leachate from within the landfill boundaries (Jacobs, 1997). The analytical results from outside the site boundaries were considered representative of site conditions because of the close proximity of the borings to the site boundaries. Because wastes were deposited directly to the

ground surfaces, potential contaminants should have been carried or leached to these off-site locations.

No organic compounds or metals above background levels were reported in the soil samples collected from 0 to 10 feet bgs in borings drilled outside the site boundaries. Data collected within the site boundaries from a previous investigation (SAIC, 1990) could not be used to conduct a quantitative human and ecological risk assessment. However, these data were used for screening purposes. The evaluation indicated that the concentrations of metals reported in shallow soil samples do not pose a risk or hazard to on-site receptors. Based on the data collected for the RI, Site 18 does not pose a risk or hazard to human or ecological receptors. However, due to the lack of deep boring data within the site boundaries, an uncertainty exists.

The response action selected in this ROD/RAP is necessary to protect the public health or welfare of the environment from actual or threatened releases of hazardous substances into the environment.

2.8 REMEDIAL ACTION OBJECTIVES

Soil analytical results from the RI indicate that the site does not pose a threat or hazard to human health or ecological receptors. Results of the groundwater analyses indicate that groundwater downgradient of the site has not been impacted through leaching of materials. Therefore, no active response actions are warranted. However, due to the lack of deep boring data within the site boundaries, some risks may not be characterized. If unknown contaminants exist below ground surface within the site boundaries, human exposure to the contaminants could occur if the site were developed. Therefore, the remedial action objective (RAO) for Site 18 is to restrict future access and development, thereby mitigating future potential exposure to contamination and maintaining land use as open space.

2.9 DESCRIPTION OF ALTERNATIVES

In coordination with the DTSC and RWQCB, the Air Force prepared a FFS to evaluate actions that would minimize the potential risks to future on-site receptors. An evaluation of the presumptive remedy for landfills was conducted based on the findings of the RI and was determined to be valid (Jacobs, 1998). Presumptive remedies are preferred technologies based on historical patterns of remedy selection and the USEPA's evaluation of performance data on technology implementation (USEPA, 1996). The USEPA established source containment as the presumptive remedy for municipal landfills in September 1993. This presumptive remedy should also be applied to all appropriate military landfills (USEPA, 1996). The components of the containment presumptive remedy are:

- Landfill cap
- Groundwater control to contain plume
- Leachate collection and treatment
- Landfill gas collection and treatment
- Institutional controls to supplement engineering controls

As discussed in the RI Report (Jacobs, 1998), the only component of the presumptive remedy applicable to Site 18 is institutional controls.

Based on USEPA guidance (USEPA, 1996), if the presumptive remedy is applicable, a FFS is required to document the site-specific information that substantiates selecting the presumptive remedy.

The FFS is not required to account for the full range of alternatives that would be addressed in a standard feasibility study, but rather the applicable components of the presumptive remedy and the no action alternative. The FFS for Site 18 evaluated two alternatives: institutional controls and no action.

2.9.1 Alternative 1 - No Action

No action involves no remedial actions except a report every five years to document site status. It is required that a no action alternative be retained for detailed evaluation as a baseline for comparison.

2.9.2 Alternative 2 - Institutional Controls

Institutional controls are a subset of land use controls and are primarily legal mechanisms imposed to ensure the continued effectiveness of land use restrictions as part of a remedial decision (Deputy Under Secretary of Defense, 2001). Under the current VAFB General Plan, current land use at Site 18 is open space. There are no plans to change the land use from open space to another designation in the VAFB General Plan. To ensure that no unauthorized activities are conducted, signs would be posted stating that the site has been investigated under the IRP and any activities conducted at the site must have prior approval of the 30 CES/CEVR. Other components of the institutional controls alternative include recording the boundaries of the site in the VAFB GIS, recording the land use restrictions in the VAFB GIS, and notifying the regulatory agencies should the land use change or the property be transferred to another owner including federal to federal transfers (California Military Environmental Coordination Committee [CMECC], 1998). Alternative 2 also includes a report every five years to document site status and report land use changes. Any change in land use would be done in accordance with applicable requirements in 40 CFR Part 300. Land use changes include (1) a change in land use classification that is inconsistent with the current open space land use designation in the VAFB General Plan (Air Force, 30th Space Wing, 2000); (2) any action that may disrupt the effectiveness of the remedial action (e.g., excavation or a construction project); and (3) any other action that might alter or negate the need for institutional control (e.g., a plan to remediate the site to allow for unrestricted use) (CMECC, 1998). VAFB will comply with the notice and deed requirements of CERCLA § 120(h).

2.9.3 Evaluation criteria

The objective of the remedial action is to restrict access and future development at Site 18. The no action and institutional controls alternatives developed for Site 18 were evaluated against seven evaluation criteria in the FFS to discover which alternative best meets the objective of the remedial action. In addition, Section 25356.1 (d) of the Health and Safety Code requires that ROD/RAPs be based on the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The NCP identifies two additional evaluation criteria that are included in this ROD/RAP: regulatory agency acceptance and community acceptance. The last two criteria are referred to as modifying criteria. Since the Air Force is required under CERCLA to comply with the NCP, the following nine evaluation criteria apply.

1. Overall Protection of Human Health and the Environment

   Addresses whether or not a remedy provides adequate protection and describes how risks posed through each pathway are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

2. Compliance with Applicable or Relevant and Appropriate Requirements

   Addresses whether or not a remedy will meet all applicable or relevant and appropriate federal and state environmental laws and regulations.

3. Long-term Effectiveness and Permanence

   Refers to the ability of a remedy to maintain reliable protection of human health and the environment over time, once cleanup goals have been met.

4. Short-term Effectiveness

   Addresses the period of time needed to complete the remedy, and any adverse impact on human health and the environment that may be posed during the construction and implementation period, until the cleanup standards are achieved.

5. Reduction of Toxicity, Mobility and Volume through Treatment

   Refers to the ability of a remedy to reduce the toxicity, mobility, and volume of the hazardous substances or constituents present at the site.

6. Implementability

   Refers to the technical and administrative feasibility of a remedy, including the availability of materials and services needed to carry out a particular option.

7. Cost

   Evaluates the estimated capital and operation and maintenance costs of each alternative.

8. Regulatory Agency Acceptance

   Indicates whether, based on the review of the information, the applicable regulatory agencies would agree with the preferred alternative.

9. Community Acceptance

   Indicates whether community concerns are addressed by the remedy and whether or not the community has a preference for a remedy.

2.10 COMPARATIVE ANALYSIS OF ALTERNATIVES

An evaluation of the two alternatives in relation to the nine decision-making criteria is summarized as follows:

1. Overall Protection of Human Health and the Environment

   Only Alternative 2, Institutional Controls, meets the RAO by restricting future development. Because full characterization of the site has not been possible, the principal site threat is the possibility of UXO and other contamination. Consequently, human health and the environment are protected by restricting access and development, as well as continuing monitoring. Therefore, Alternative 2 offers the highest degree of protection of human health and the environment of the two alternatives considered. Any future activities at the site would be coordinated with VAFB environmental personnel who know the findings of the RI conducted at the site.

2. Compliance with Applicable or Relevant and Appropriate Requirements

   Alternative 2, Institutional Controls, is the only alternative that would comply with all ARARs. Applicable requirements would not be addressed by Alternative 1, No Action, because no actions would be taken.

The ARARs for Site 18 are as follows:

- Chemical-Specific ARARs
  - USEPA Region IX Preliminary Remediation Goals (PRGs).
  - California Leaking Underground Fuel Tank (LUFT) action levels.
- Location-Specific ARARs
  - None Apply
- Action-Specific ARARs
  - California Code of Regulations (CCR), Title 27, Section 21135. Security at closed sites. Requires site security, including signs and restriction of access to closed landfill sites to protect public health and safety.

  - CCR, Title 22, Section 67391.1. Requirements for Land Use Covenants. Requires that appropriate measures be in place to ensure proper future land use. Specific provisions of 22 CCR § 67391.1 have been determined by the Air Force to currently be relevant and appropriate requirements for the Site 18 remedy. Subsections (a), (b) and (e)(2) of this regulation provide that if a remedy at property owned by the federal government will result in levels of hazardous substances remaining on property at levels not suitable for unrestricted use, and it is not feasible, as is the case with Site 18, to record a land use covenant, then the record of decision is to clearly define and include limitations on land use and other institutional control mechanisms to ensure that future land use will be compatible with the levels of hazardous substances remaining on the property. These limitations and mechanisms are more specifically set forth elsewhere in this ROD, to include annotating the use and activity restrictions and controls in the VAFB General Plan, and continuing to implement review and approval procedures for any construction and ground disturbing activities in Site 18.

3. Long-term Effectiveness and Permanence

   Only Alternative 2 would be sufficient in assuring that controls would be in place to restrict future activities at the site.

4. Short-term Effectiveness

   Both alternatives would offer short-term effectiveness. There would be no impact to the community, on-site workers, or the environment with the implementation of either alternative.

5. Reduction of Toxicity, Mobility and Volume Through Treatment

   Since no contaminants requiring treatment were identified at Site 18, this criterion does not apply.

6. Implementability

   Alternatives 1 and 2 are both considered readily implementable. Alternative 2 requires more action than Alternative 1, but because the actions described are simple, this alternative is only slightly less implementable than Alternative 1.

7. Cost

   Alternative 1 is the lower cost alternative since it only involves preparing a site status report every five years. There are no capital costs associated with the no action alternative. The cost of Alternative 2 is higher due to the actions involved.

8. Regulatory Agency Acceptance

   The DTSC and the RWQCB have provided input during past investigation at Site 18, have concurred with the recommendation for no further investigation of the site, and support the Institutional Controls alternative.

9. Community Acceptance

   The draft ROD/RAP was submitted to the VAFB CAB for review. The CAB reviewed the document and submitted comments that are included in Section 3.1. The general public was provided the opportunity to comment on the draft ROD/RAP through the 30-day comment period. No comments were provided during the public comment period.

2.11 PRINCIPAL THREAT WASTES

There are no known principal threat wastes, based on the limited sampling conducted at Site 18. However, because sampling is limited, the potential presence and therefore threat of UXO and other contaminants cannot be ruled out.

2.12 SELECTED REMEDY

2.12.1 Summary of the Rationale for the Selected Remedy

Based on consideration of the requirements of Health and Safety Code Section 25356.1 and the detailed analysis of the alternatives using the nine criteria, the proposed remedy for Site 18 is Alternative 2, Institutional Controls.

2.12.2 Description of the Selected Remedy

The following implementation, inspection and maintenance recommendations and guidelines will be followed under the Selected Remedy.

- The VAFB General Plan is used as the master planning document for documenting and approving all land use designations and land use restrictions. It is also the master plan for approving proposed development. The VAFB General Plan will be amended to record the land use designations and restrictions. It will state: "This Site is Off Limits." If the Air Force requires a change in the land use as set forth in this ROD, the Air Force will follow applicable requirements as directed by 40 CFR Part 300. The planning phase for all construction activities requires extensive coordination using the 30 SW Form 35. This form is a checklist for coordination through all applicable offices on VAFB, such as Safety, Utilities, Environmental, Real Estate, VAFB Planning, and Fire Department. This form must be completely coordinated and approved by all applicable offices during the design phase of construction projects. The Environmental Office, which includes the Restoration Program Office, coordinates and approves all Form 35s. Prior to coordinating, the Environmental Office reviews the VAFB General Plan. Designs cannot be finalized and construction cannot begin without a completed Form 35. This provides all necessary checks and balances to help ensure that no construction is done at an IRP site in violation of land use restrictions.

- The boundaries of the site will be defined in the VAFB GIS. The VAFB GIS is a coordinate based mapping system that will record the boundaries of Site 18 as defined in the RI (Jacobs, 1997).

- Five signs will be posted at regular intervals around the site boundary to act as a warning to potential site visitors and to define the boundaries of Site 18 (Figure 2-3). The signs will state the following: "This site has been investigated under the IRP and any activities at the site must have prior approval of 30 CES/CEVR. For further information call 805-606-3919." Since no fencing or buildings exist at Site 18, signs will be placed on posts sunk into the ground.

- In accordance with CERCLA five-year reviews, monitoring wells 18-MW-4, 18-MW-5 and 18-MW-6, at or near the site, will be monitored at least once every five years. Samples will be analyzed for the following: VOCs, SVOCs, PCBs, total petroleum hydrocarbons in the diesel range, total petroleum hydrocarbons in the gas range, and total and dissolved metals.

- Appropriate regulatory agencies will be notified of proposed land use changes that are inconsistent with the use restrictions and assumptions described herein or property interest transfers in accordance with CERCLA § 120(h).

- The Air Force agrees that if in the future it transfers to nonfederal entities any portion of the Site 18 property that is not suitable for unrestricted use, it will comply with certain provisions of current Title 22, California Code of Regulations, § 67391.1 and, to the extent authorized by law, execute a land use covenant described therein that incorporates the limitations on land use and other appropriate institutional controls contained in this record of decision. If such a transfer of Site 18 property is planned, the Air Force will whenever possible notify and consult with USEPA and California DTSC six months in advance of such transfer to ensure such certain provisions of this regulation are identified and met. If it is not possible to provide such notification and consultation six months in advance, the Air Force shall provide this notification and consultation as soon as possible, but not later than sixty days prior to the transfer of such property. The Air Force will, if and as required by 40 CFR § 300.435(c), revise this record of decision to incorporate the specific provisions of this regulation that will be met.

- For five-year reviews under CERCLA a report will be written every five years to document site status and report land use changes. The report will include, but is not limited to:

  - Warning sign inspection and maintenance records
  - VAFB GIS amendment records
  - Completed monitoring well development forms, chains of custody and analytical results
  - Land use change records
  - Additional proposed site inspection work or development at, or immediately adjacent to Site 18

- Vandenberg Environmental Management Flight, Restoration will be responsible for administering the Site 18 institutional controls.

2.12.3 Summary of Estimated Remedy Costs

Proposed costs of the selected remedy were calculated in the FFS (Jacobs, 1998). They have been updated to reflect changes made during the ROD/RAP preparation process. Table 2-3 presents the estimated capital and annual costs respectively. The capital cost for posting signs is estimated to be $13,000. Annual operation and maintenance (O&M) costs for sign maintenance, groundwater monitoring, and report preparation is $3,540 (Table 2-3). Using a discount rate of 5 percent and a time period of 340 years, the present worth cost for Alternative 2 is approximately $83,800.

TABLE 2-3
ESTIMATED COSTS FOR ALTERNATIVE 2, INSTITUTIONAL CONTROLS

Capital Costs

Description	Quantity	Unit	Unit Cost	Item Cost
1. Posting of Signs	5	Lump Sum	$2,000	$10,000
Subtotal – Estimated Construction Cost				$10,000
Bid Contingency (10%)				$1,000
Scope Contingency (20%)				$2,000
Total Estimated Capital Cost				$13,000

Estimated Annual O&M Costs

Description	Quantity	Unit	Unit Cost	Item Cost
1. Maintenance on Posted Signs	5	Each	$50	$250
2. Five-Year Evaluation Report*	0.2	Lump Sum	$10,000	$2,000
3. Groundwater Monitoring*	0.2	Lump Sum	$3,500	$700
Subtotal – Estimated Construction Cost				$2,950
Scope Contingency (20%)				$590
Total Estimated O&M Cost				$3,540

* Assume 1/5 report and 1/5 groundwater sampling charged each year

The information in this cost estimate table is based on the best available information regarding the anticipated scope of the remedial alternative. Changes in the cost elements are likely to occur as a result of new information and data collected during the engineering design of the remedial

alternative. Major changes may be documented in the form of a memorandum in the Administrative Record File, an ESD or a ROD amendment. This is an order-of-magnitude engineering cost estimate that is expected to be within +50 to -30 percent of the actual project cost.

2.12.4 Expected Outcomes of the Selected Remedy

It is not anticipated that the site will be made available for any future development that is inconsistent with its past use as a landfill on a military base, nor will such use be allowed. Future programs may confirm or deny the presence of UXO at this site. If, in the future, it can be established in accordance with legal requirements that no UXO or other hazardous substance above action levels is present at this site, deep soil samples could be collected within the boundaries of the landfill and clean closure could potentially be achieved for Site 18. On the other hand, if UXO is detected or other hazardous substances are determined to be in the soil or groundwater, the Air Force will reevaluate the sufficiency of the selected remedy.

2.13 STATUTORY DETERMINATIONS

Under CERCLA §121, the lead agency (which, under CERCLA, is the Air Force) must select remedies that are protective of human health and the environment, comply with federal and state requirements that are legally applicable or relevant and appropriate to the remedial action, and are cost effective. This remedy uses institutional controls to restrict access to potentially affected media and to prevent any site use that may not be compatible with past site activities.

2.13.1 Protection of Human Health and the Environment

Although the RI for Site 18 indicates that the site does not pose a risk to human health or the environment, complete sampling data were not collected within the site boundaries because of potential UXO. Therefore, risks to future on-site receptors are uncertain. The major advantage of the proposed alternative is that it meets the RAO and provides additional safeguards to human health and the environment. If no actions were taken at the site, unauthorized development of the

site area may occur. Representatives of the regulatory agencies (DTSC and RWQCB) have expressed concern that institutional controls are necessary at Site 18 to prevent potential development of the site area that may not be compatible with the past site use.

2.13.2 Compliance with Applicable or Relevant and Appropriate Requirements

No location-specific ARARs apply to Site 18. Alternative 2 would meet the chemical-specific and action-specific ARARs identified in Section 2.10.

2.13.3 Cost-Effectiveness

The only difference in cost between the No Action alternative and the preferred alternative is the capital costs required for posting the signs and an annual cost for checking and maintaining the signs and sampling the groundwater monitoring wells incurred by the preferred alternative. These costs are relatively small and would be outweighed by the benefits of safeguarding human health and the environment, long-term effectiveness, and compliance with regulatory ARARs.

2.13.4 Utilization of Permanent Solutions and Alternative Treatment (or Resource Recovery) Technologies to the Maximum Extent Practicable

No contaminants have been identified that require treatment. However, due to the uncertainty that still exists about the exact nature of potential contaminants in the subsurface soil within the site boundaries, institutional controls are required to ensure that future land use is compatible with the site's history as a military landfill.

2.13.5 Preference for Treatment as a Principal Element

No contaminants have been identified at Site 18 that require treatment. This criterion therefore does not apply.

2.13.6 Five-Year Review Requirements

Because this remedy will result in possible contaminants remaining on site above levels allowing for unlimited use and unrestrictive exposure, reviews will be conducted at least every five years after commencement of the remedial action to assure that the remedy continues to provide adequate protection of human health and the environment.

2.14 DOCUMENTATION OF SIGNIFICANT CHANGES FROM PREFERRED ALTERNATIVE OF PROPOSED PLAN

The ROD/RAP was released for public comment in September 2002. The ROD/RAP identified Alternative 2, Institutional Controls as the preferred alternative. No issues were raised during the comment period. It was determined that no significant changes to the remedy, as identified in the ROD/RAP, were necessary or appropriate.

3.0 RESPONSIVENESS SUMMARY

3.1 STAKEHOLDER ISSUES AND LEAD AGENCY RESPONSES

The ROD/RAP was submitted to the VAFB CAB for review. The CAB Document Review Subcommittee reviewed the ROD/RAPs for Sites 18 and 22 and submitted the following comments and recommendations on 25 July, 2002. Below are the VAFB responses.

Comment No. 1: **The term "UXO" is not defined in the Site 18 document. The first time the term is used it should be delineated as "unexploded ordnance." In addition, UXO should be placed on the list of Acronyms and Abbreviations.**

Response: Concur. The first time the term UXO is used, it will be identified as "unexploded ordnance". In addition, UXO will be added to the list of Acronyms and Abbreviations.

Comment No. 2: **Since UXO is present at both sites, it should be discussed under Section 4[1] as a risk associated with the sites. Even if risk due to UXO is mitigated, considered minimal or handled in some other way, it should be addressed in the document.**

Response: The potential presence of UXO in the landfills will be discussed in greater detail.

Comment No. 3: **Both documents refer to the "presumptive remedy for landfills" in Section 5[2]. This phrase should be discussed and defined, as it appears to be a general standard used to evaluate such sites. The reader, however, may be unfamiliar with it.**

Response: Concur. The presumptive remedy for landfills will be defined and discussed in greater detail in Section 5.

Comment No. 4: **In both documents the terms "Base" and "VAFB" are used interchangeably. This practice is confusing; the documents should use only one of these terms to refer to Vandenberg AFB.**

Response: Concur. The term "VAFB" will be substituted for "Base" throughout the documents.

[1] Section 4 of the Public Draft ROD/RAP is now included in Section 2.7 of the current document.
[2] Section 5 of the Public Draft ROD/RAP is now included in Section 2.9 of the current document.

Comment No. 5: **Overall the reviewers found the document well written. With minor adjustments to these documents the general public should be able to understand and appreciate the actions to be taken by the Air Force to protect human health and the environment in regard to these sites.**

Response: Concur.

The ROD/RAP was submitted for public review and comment for a period of one month. The public comment period began September 3, 2002 and extended through October 2, 2002. No public comments were submitted during the public comment period.

In addition, a public meeting was conducted on September 12, 2002. A briefing on the proposed plan was presented and a formal oral comment period was made available for those who wanted to voice their comments. A transcript of the public hearing proceedings is included in Appendix B.

3.2 TECHNICAL AND LEGAL ISSUES

No technical or legal issues have been identified.

4.0 REFERENCES

California Military Environmental Coordination Committee, 1998. Institutional Control Protocol at Open Bases. California Military Environmental Coordination Committee. January.

Department of the Air Force, 30th Space Wing, 2000. Vandenberg Air Force Base General Plan. January.

Deputy Under Secretary of Defense, 2001. Policy on Land Use Controls Associated with Environmental Restoration Activities. Memorandum from DUSD (Environmental Security). January 17.

Department of Toxic Substances Control, 1995. Remedial Action Plan (RAP) Policy. Document No. EO-95-007-PP. December.

Jacobs Engineering Group Inc., 1993. IRP Remedial Investigation/Feasibility Study (OUs 1, 2, 3B, 4 and 5) Work Plan, Vandenberg Air Force Base. March.

Jacobs Engineering Group Inc., 1997. Final Remedial Investigation Report, Site 18 – Landfill 3/4. April 14.

Jacobs Engineering Group Inc., 1998. Site 18 – Landfill 3/4 Focused Feasibility Study. March.

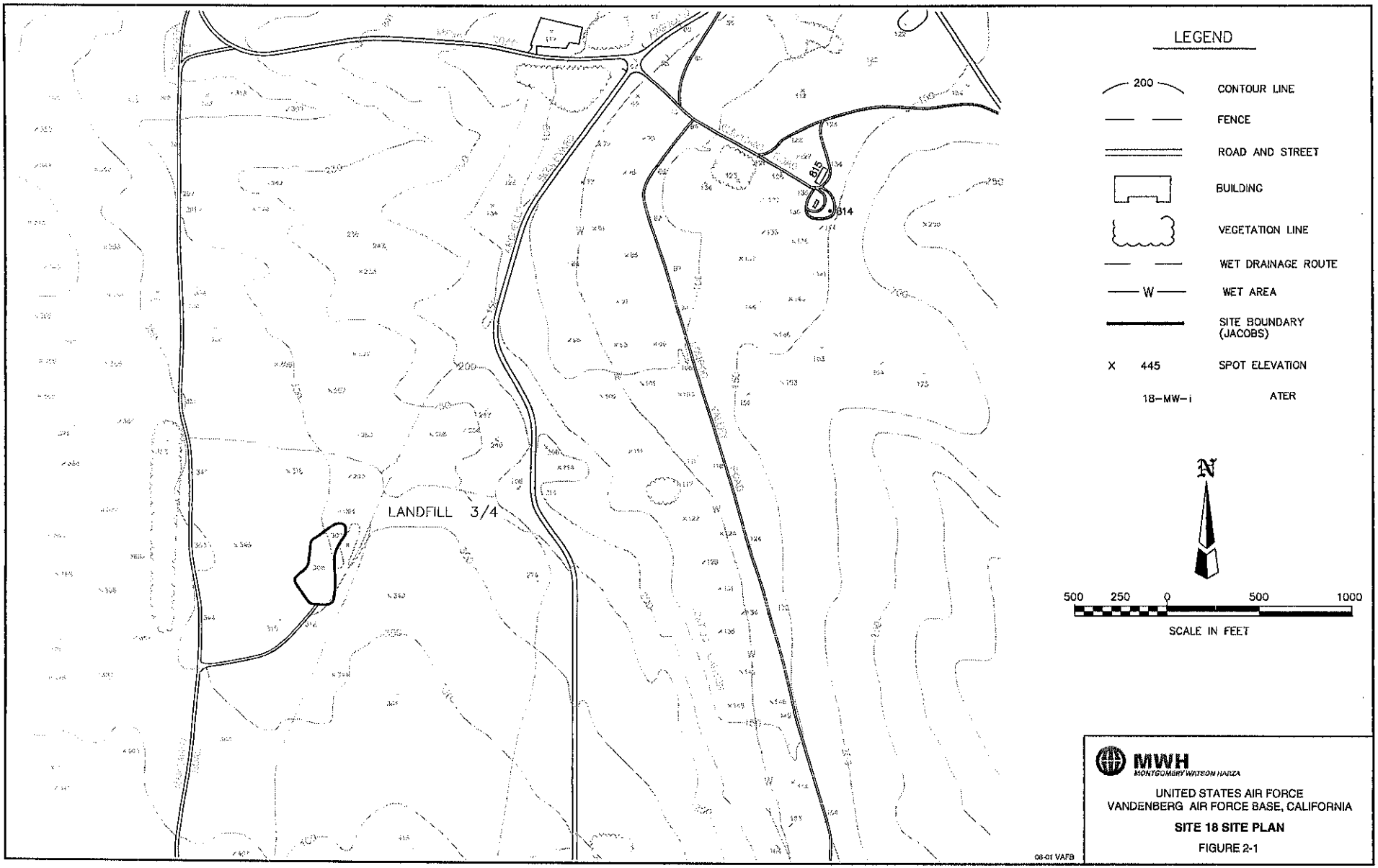
Science Applications International Corporation, 1990. Final Report, IRP Stage 1, Site Characterization Vandenberg AFB, California. Prepared for HQ SAC/DEPV, Offutt AFB, Nebraska and USAF, Human Systems Division, IRP Program Office, Brooks AFB, Texas. SAIC, Environmental Remediation Division. April.

U. S. Environmental Protection Agency, 1996. Application of the CERCLA Municipal Landfill Presumptive Remedy to Military Landfills (Interim Guidance). Office of Solid Waste and Emergency Response Direction No. 9355.0-62FS. April.

U. S. Environmental Protection Agency, 1999. A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents. July.

U. S. Environmental Protection Agency, 2001. Comprehensive Five-Year Review Guidance. EPA 540-R-01-007. June.

FIGURES


LEGEND
200
CONTOUR LINE
FENCE
ROAD AND STREET
BUILDING
VEGETATION LINE
WET DRAINAGE ROUTE
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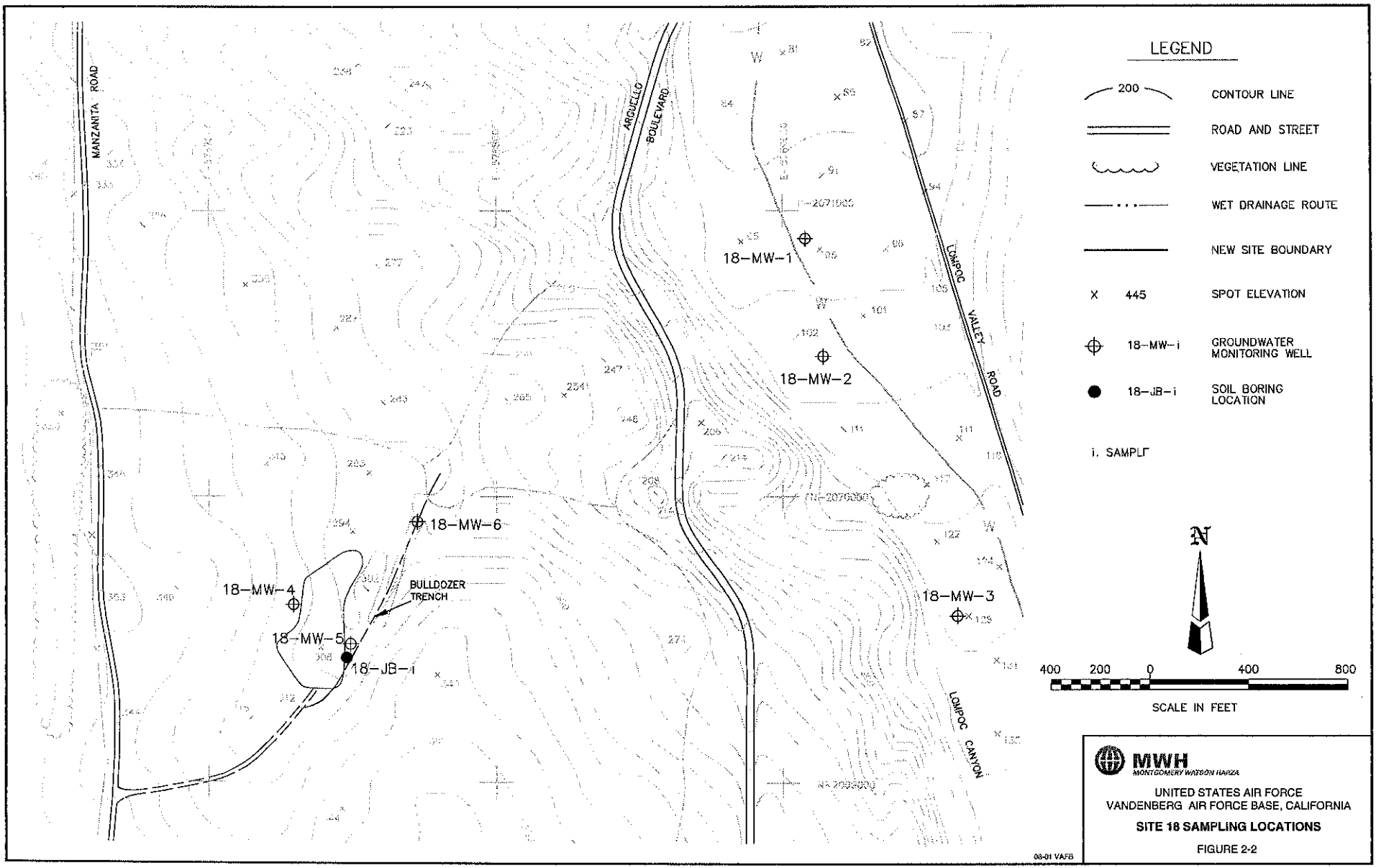
SCALE IN FEET
08-01 VAFB
MWH
MONTGOMERY WATSON HARZA
UNITED STATES AIR FORCE
VANDENBERG AIR FORCE BASE, CALIFORNIA
SITE 18 SITE PLAN
FIGURE 2-1

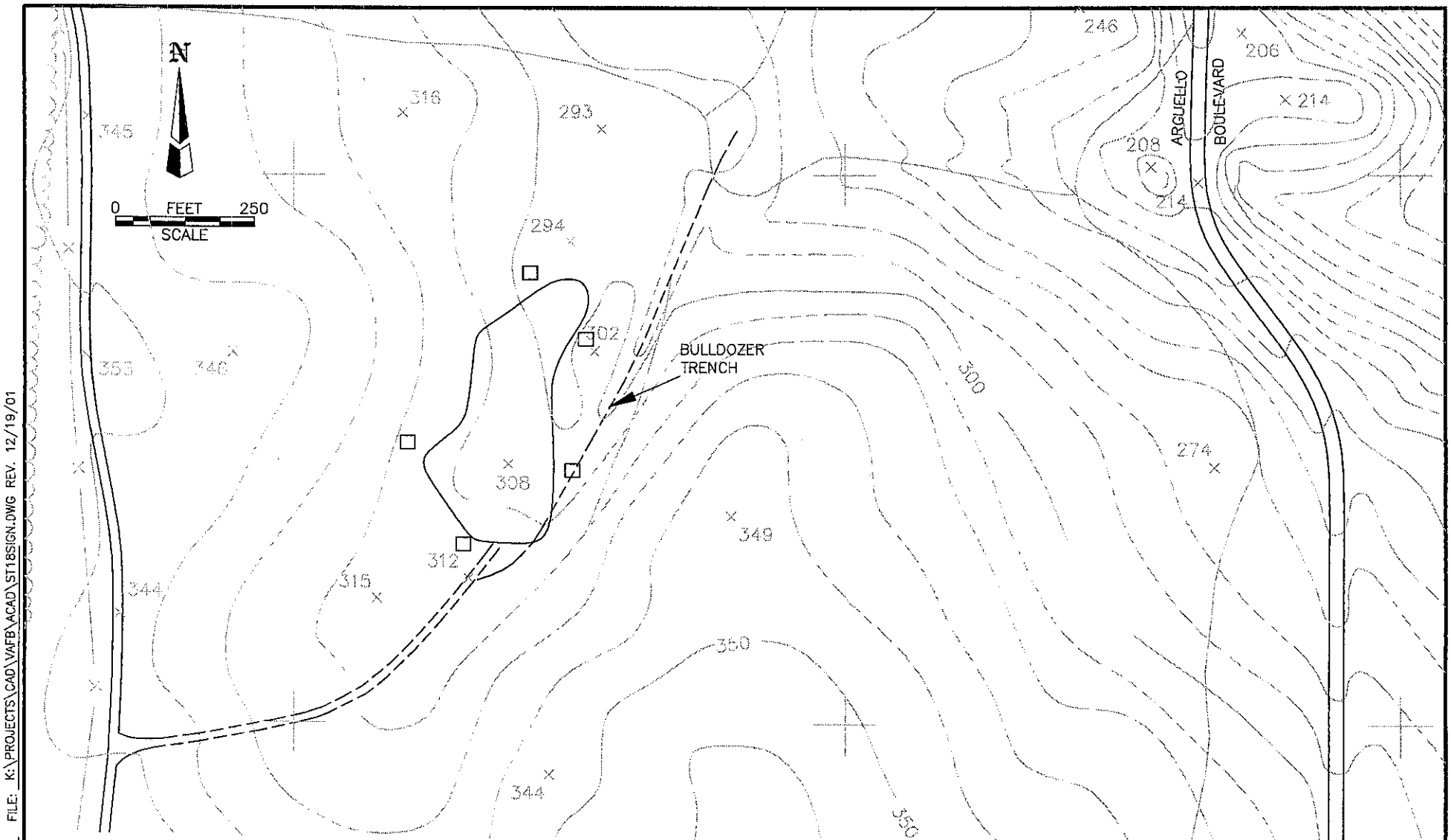


MWH
MONTGOMERY WATSON HARZA

UNITED STATES AIR FORCE
VANDENBERG AIR FORCE BASE, CALIFORNIA

SITE 18 SAMPLING LOCATIONS

FIGURE 2-2



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LEGEND

- 250 CONTOUR LINE
- ROAD AND STREET
- VEGETATION LINE
- WET DRAINAGE ROUTE
- X 445 SPOT ELEVATION
- WARNING SIGN

MWH
MONTGOMERY WATSON HARZA

UNITED STATES AIR FORCE
VANDENBERG AIR FORCE BASE, CALIFORNIA

SITE 18 WARNING SIGN LOCATIONS

FIGURE 2-3

APPENDIX A

ADMINISTRATIVE RECORD LIST FOR SITE 18

APPENDIX A

ADMINISTRATIVE RECORD LIST FOR SITE 18

Date	Author	Title
April 1990	Science Applications International Corporation	IRP Stage I Site Characterization, Final Report Volume I.
March 1993	Jacobs Engineering Group Inc.	IRP Remedial Investigation/ Feasibility Study (OUs 1, 2, 3B, 4 and 5).
September 1994	Department of Toxic Substances Control	State (DTSC and Regional Board) comments on Site 18, Preliminary Draft RI Report, July 1994.
July 1996	Regional Water Quality Control Board	Regional Board comments on Site 18, Draft Final RI Report, March 1996 and Site 22, Draft Final RI Report, January 1996 (the State did not receive a draft Site 22 RI Report).
April 1997	Jacobs Engineering Group Inc.	Remedial Investigation Report, Site 18 – Landfill 3/4, Final (Volume IV).
December 1997	Department of Toxic Substances Control	State (DTSC and Regional Board) comments on Site 18 Draft Focused Feasibility Study, October 1997 and Site 22 Draft Focused Feasibility Study, October 1997.
January 1998	Jacobs Engineering Group Inc.	Response to comments from DTSC, Sites 18 and 22, Draft Focused Feasibility Study, dated October 1997.
March 1998	Department of Toxic Substances Control	State (DTSC and Regional Board) comments on Site 18 Draft Final Focused Feasibility Study, January 1998 and Site 22 Draft Final Focused Feasibility Study, January 1998.

Date	Author	Title
March 1998	Jacobs Engineering Group Inc.	Site 18 – Landfill 3/4, Final Focused Feasibility Study (01-G464-M6-0049).
November 1998	Regional Water Quality Control Board	Regional Board comments on Remedial Action Plan, Site 18 and Site 22, August 1998.
November 1998	Department of Toxic Substances Control	DTSC comments on Remedial Action Plan, Site 18 and Site 22, August 1998.
November 2000	Department of Toxic Substances Control	Comments on Draft Remedial Action Plan for Site 18 and Site 22.
November 2001	Department of Toxic Substances Control and Regional Water Quality Control Board	State (DTSC and Regional Board) comments on Remedial Action Plan, Site 18 and Site 22, October 2001.
December 2001	MWH	Response to comments on Draft Remedial Action Plan.
January 2002	Department of Toxic Substances Control and Regional Water Quality Control Board	State (DTSC and RWQCB) comments on Remedial Action Plan for Site 18 and Remedial Action Plan for Site 22 dated 21 December, 2001.
May 2002	MWH	Final Response to State comments on the Remedial Action Plan for Site 18 and Remedial Action Plan for Site 22 dated December 2001.

APPENDIX B

COURT REPORTER'S TRANSCRIPT OF PUBLIC HEARING PROCEEDINGS

CONDENSED COPY

REPORTER'S TRANSCRIPT OF PROCEEDINGS

INSTALLATION RESTORATION PROGRAM

SITES 18 and 22

RECORD OF DECISION/REMEDIAL ACTION PLANS

VANDENBERG AIR FORCE BASE, CALIFORNIA

PUBLIC HEARING

HANCOCK COLLEGE, LOMPOC CAMPUS

LOMPOC, CALIFORNIA

THURSDAY, SEPTEMBER 12, 2002

10:10 A.M.

REPORTED BY:
KATHERINE H. KAPLANEK
CSR 2971, RPR

KAPLANEK
COURT
REPORTING

(805) 489-2347

P.O. Box 213
Arroyo Grande, CA 93421

REPORTER'S TRANSCRIPT OF PROCEEDINGS
INSTALLATION RESTORATION PROGRAM
SITES 18 and 22
RECORD OF DECISION/REMEDIAL ACTION PLANS
VANDENBERG AIR FORCE BASE, CALIFORNIA
PUBLIC HEARING
HANCOCK COLLEGE, LOMPOC CAMPUS
LOMPOC, CALIFORNIA
THURSDAY, SEPTEMBER 12, 2002
10:10 A.M.

REPORTED BY:
KATHERINE H. KAPLANEK
CSR 2971, RPR

THE INSTALLATION RESTORATION PROGRAM
SITES 18 and 22
RECORD OF DECISION/REMEDIAL ACTION PLANS
VANDENBERG AIR FORCE BASE, CALIFORNIA
PUBLIC HEARING
was conducted at Allan Hancock College, Lompoc Campus, One Hancock Drive, Lompoc, California, verbatim reported by Katherine H. Kaplanek, CSR and Registered Professional Reporter in and for the State of California, on Thursday, September 12, 2002, commencing at the hour of 10:10 a.m.

APPEARANCES:

LT. COL. SCOTT WESTFALL, Vandenberg Air Force Base Environmental Flight, Presiding
Panel Members:
BEATRICE KEPHART, Vandenberg Air Force Base Environmental Flight

DR. NING-WU CHANG, Department of Toxic Substances Control, Cypress, California
BILL MEECE, Regional Water Quality Control Board, San Luis Obispo

KIM FOREMAN, Public Relations, Department of Toxic Substances Control, Cypress, California
CHRISTOPHER R. BARTOS, Principal Environmental Scientist, Project Manager for Montgomery Watson Harza

LOMPOC, CALIFORNIA
THURSDAY, SEPTEMBER 10, 2001
10:10 A.M.
-- oOo --

MS. KEPHART: Well, good morning, everyone. I think we'll probably get started now. It's a little bit after 10:00.

I'd like to welcome everyone. This is our public meeting on the proposed land use controls at our IRP Sites 18 and 22. And these were former landfill sites

I'd like to introduce a few people. And if you could, stand as I call your name.

I'd like to introduce Colonel Westfall, who is my boss and will be giving a talk in a few minutes

We have Mr. Bill Meece with us from the Regional Water Quality Control Board up in San Luis Obispo.

Dr. Ning-Wu Chang from the Department of Toxic Substances Control in Cypress.

And Ms. Kim Foreman, and she is a community relations person down at the DTSC in Cypress also. Okay.

There will be time for comments following Lieutenant Colonel Westfall's talk, and these -- your comments will be addressed in the -- in writing in the Final Decision document.

And because of the nature of this meeting, we're not really going to accept any questions or answer any questions; won't be a question-and-answer session. But you're welcome to stay for the CAB meeting that starts at 11:00 and we can answer a few questions there, if you need to

I'd like to turn it over to Colonel Westfall for his talk.

LT. COL. WESTFALL: Thank you, Bea.

In preparation for this public meeting, Bea provided me with a script and she said, "No ad-libbing, Westfall. You have to follow the script."

And people who have been at farewells and little roasts with me know that that's really quite a tasker that she's attempting to lay on me because I don't know that I can do that, but I'll certainly give it my best.

In fact, I originally thought I was going to be late getting here because I was in a video

teleconference with my headquarters, and I erroneously thought that the video teleconference was from 8:00 to 9:00, but it turned out it was from 8:00 to 10:00. And I'm going, "Uh-oh, you know, we have a situation and I've got to find a way to escape my headquarters." Because, you know, I'll tell you a secret, folks. You know, there is only one thing worse than video teleconference with the headquarters, and that's when your headquarters comes to pay you a visit like an inspection or something like that. Oh, I see a headquarters person here. She's smiling and enjoying it. Because, you know, that way, you know that the meeting is going to start off with two lies. The first one, of course, where the headquarters says "We're here to help you" and then you lie right back and say, "Well, we're glad you're here."

But I do want to take this opportunity to say that I'm glad that all of you are here for today's public meeting. And, with that, I'll begin with the script.

Good morning, Ladies and Gentlemen. I'd like to welcome you to the public meeting on the Record of Decision/Remedial Action Plans, called the Draft ROD/RAPs for former Landfill Sites 18 and

22 at Vandenberg Air Force Base.

I'm Lieutenant Colonel Scott Westfall of Vandenberg Air Force Base Environmental Flight. I will serve as the presiding officer for this meeting.

My purpose this morning is to present an overview of the Draft ROD/RAPs and ensure that everyone who wishes to provide input or make a comment has a fair opportunity to speak and be heard.

And I just now realize I'll slow down just a little bit for you.

We have with us today Mr. Chris Bartos, the project manager for MWH. MWH is under contract to the Air Force and has helped evaluate the alternatives for these sites and prepared the Draft ROD/RAPs.

This meeting will be in two parts. The first part of the meeting will present you with information on Sites 18 and 22 Draft ROD and RAPs.

The second part is the public comment portion. This is when you will have an opportunity to provide information or to make a statement for the record. Your input will provide the Air Force with the benefit of your knowledge of the local

area and any environmental effects, whether adverse or beneficial, that you think may result from the proposed action or alternatives.

Separate documents have been prepared for Sites 18 and 22. Each of these documents has been prepared with the dual purpose of satisfying the requirements of both a ROD and a RAP.

The ROD is the decision document under the Comprehensive Environmental Response Compensation and Liability Act of 1980, whereas the RAP is the decision document under the California Health and Safety Code.

Both documents serve a similar purpose and, therefore, have been combined into one decision document for each of these sites.

The ROD/RAP provides background on the site, outlines the goals of the remedy, summarizes the alternatives and explains the rationale for remedy selection.

The review process for the ROD/RAP is the means by which the public may provide input into the decision-making process and is a critical component of the remedy selection process.

Site 18: Site 18 is in south Vandenberg Air Force Base, approximately one and a half miles

south of the south gate just west of Arguello Road. The former landfill site covers approximately two acres and there are no buildings within or near the site boundaries. The site is presently covered with soil and natural vegetation.

Disposal operations at Site 18 started in the mid to late 1960s. Materials disposed of at the site were primarily construction debris from a launch complex and a power plant.

Visual inspections of the site indicate that other debris including asphalt, broken wood pallets, and pieces of PVC pipe have also been deposited.

Site 22: Site 22 is west of the Cantonment Area, southeast of the intersection of 35th Street, New Mexico Avenue and Terra Road. This former landfill covers approximately five acres.

Waste disposed of at the site primarily consisted of construction debris, although small quantities of waste oils and solvents were also reported. Site 22 was never a former landfill; however, construction debris was buried at the site.

The geophysical survey indicated that Site

22 was used for the surficial disposal of a small amount of construction debris. This was also supported by historical aerial photography review. The only subsurface anomaly reported was identified as a buried pipe

Sites 18 and 22 were investigated under the Installation Restoration Program at Vandenberg as part of the base-wide program to investigate hazardous waste sites for their potential impact to human health and the environment

Remedial investigations were conducted in accordance with work plans approved by the Department of Toxic Substances Control and the Regional Water Quality Control Board

A number of investigation activities were conducted for these sites including records search and interviews, aerial photography review, well inventory, geophysical fiscal surveys and soil gas surveys.

There is no direct evidence that unexploded ordnance was ever disposed of at Site 18 or Site 22. However, due to the possible presence of unexploded ordnance at any military landfill, deep soil borings were not advanced within the boundaries of these sites. Instead, soil samples

were collected from shallow borings within the landfill boundaries

In addition, soil and groundwater samples were collected from deep borings near the perimeter of the landfills and from upgradient and downgradient groundwater monitoring wells to determine if potential leachate was migrating off-site. Potential contaminants would have been carried or leached to these off-site locations. Metals slightly above background were detected only in deep soil samples from 50 to 225 feet below ground surface with respect to Site 18 and likely represent natural lithologic variations.

No organic compounds other than low concentrations of petroleum hydrocarbons below the 100 milligram per kilogram action level were detected in the soil. Groundwater samples from six monitoring wells detected petroleum hydrocarbons well below the action level and zinc above the background threshold but below the regulatory criteria, the Maximum Contaminant Level, or MCL.

Based on the open space land use designation and the detected analytes, the Remedial Investigation concluded that the site poses no immediate risk to human health and the environment

The evaluation indicated that the concentration of metals reported in shallow soil samples do not pose a risk or hazard to on-site receptors. However, a potential still exists for the presence of unknown substances or materials below the surface which may create a risk, should the land use change in the future.

With respect to Site 22 findings, only low concentrations of volatile organic compounds were detected in soil at or near Site 22. No other organic compounds or metals above background levels were detected in soil or groundwater

A soil gas survey conducted at Site 22 detected no volatile organic compounds other than methane at a low concentration. The only site-related data gathered for the Remedial Investigation that may pertain to exposure to an on-site worker or ecological receptor is the methane reported in the soil gas survey. The maximum concentration of methane was well within the acceptable emission standard. The Remedial Investigation therefore concluded that there are no potential impacts to human or ecological receptors from the measured methane concentrations.

Concerning evaluation of alternatives,

because a potential still exists for unknown substances or materials to exist below the surface which may create a risk should the land use change in the future, remedial alternatives were evaluated for Sites 18 and 22 through Focused Feasibility Studies. The remedial alternatives for Sites 18 and 22 can be summarized together due to the similarities of these two sites

In coordination with the DTSC and the Regional Water Quality Control Board, the Air Force prepared a Focused Feasibility Study to evaluate actions that would minimize the potential risks to future on-site receptors.

An evaluation of the presumptive remedy for landfills was conducted. Presumptive remedies are preferred technologies based on historical patterns of remedy selection and the U.S Environmental Protection Agency's evaluation of performance data on technology implementation. The EPA established source containment as the presumptive remedy for municipal landfills in September 1993 and military landfills in 1996.

The components of the containment presumptive remedy are: A landfill cap, groundwater control to contain the plume, leachate

collection and treatment, landfill gas collection and treatment, institutional controls to supplement engineering controls.

Based on site-specific information, the only component of the presumptive remedy applicable to Sites 18 and 22 is institutional controls. Therefore, the Focused Feasibility Study evaluated two alternatives: Institutional controls and the no action alternative.

The remedial action objective for Sites 18 and 22 is to restrict future development, thereby mitigating future potential exposure to possible contamination related to unknown contents of the landfill.

A summary of the alternatives with respect to Alternative 1, the no action alternative: No action involves no remedial action except a report every five years to document site status. It is required that a no action alternative be retained for detailed evaluation as a baseline for comparison.

Alternative 2, institutional controls: Institutional controls are a subset of land use controls and are primarily legal mechanisms imposed to ensure the continued effectiveness of land use

restrictions as part of a remedial decision.

Under the current Vandenberg Air Force Base General Plan, current land use at Sites 18 and 22 is open space and there are no plans to change the land use from open space to another designation.

To ensure that no unauthorized activities are conducted, signs would be posted stating that the site has been investigated under the Installation Restoration Program and any activities conducted at the site must have prior approval of the Vandenberg Environmental Management Flight.

Other components of the institutional controls alternative include recording the boundaries of the site and the land use restrictions in the Vandenberg Geographical Information System and notifying the regulatory agencies should the land use change or property transfer to other ownership, including federal to federal transfers.

Alternative 2 also includes a report every five years to document site status and report minor land use changes. Major land use changes would require regulator approval.

The evaluation criteria: The objective of

the remedial action is to restrict access and future development at Sites 18 and 22. The no action and institutional controls alternatives were evaluated against nine standard evaluation criteria in the Focused Feasibility Study to determine which alternative best meets the objective of the remedial action.

These criteria include: One, overall protection of human health and the environment;

Two, compliance with state and federal requirements;

Three, long-term effectiveness and permanence;

Four, short-term effectiveness;

Five, reduction of toxicity, mobility and volume through treatment;

Six, implementability;

Seven, cost;

Eight, regulatory agency acceptance;

And 9, community acceptance.

When compared to the criteria, Alternative 2, Institutional Controls, was found to be equal or preferable to the No Action Alternative with minor exceptions. Although the requirements are minor -- maintaining signage and updating the Vandenberg

General Plan -- there is an incremental cost increase implementing Alternative 2 over the No Action Alternative.

Concerning the implementation plan: Finally, the ROD/RAPs for Sites 18 and 22 include an implementation plan. This section specifies required actions for implementation of the decision document.

The actions include: Updating the Vandenberg Air Force Base General Plan by recording the land use designations and restrictions presented in the ROD/RAPs. This is implemented primarily through a Geographic Information System that must be accessed prior to granting building permits or any changes in the land use. The Sites 18 and 22 boundaries will be accurately defined in the Geographical Information System.

Signs will be posted at regular intervals on the landfill perimeters stating, quote, "This site has been investigated under the IRP and any activities at the site must have prior approval of 30 CES/CEVR. For further information, call (805)606-3919," end quote.

Five-year reviews will be conducted including sampling of designated monitoring wells.

Regulatory agencies will be notified of proposed land use changes or if property transfer to other ownership occurs.

The five-year report will include verification of the implementation conditions of the ROD/RAPs.

Vandenberg Environmental Management Flight will be responsible for administering the institutional controls.

Concerning the comment procedures as a part of this public meeting, if you wish to speak today, we would like you to fill out and hand in one of the attendance cards. They are available. Ms. Kephart can provide them to you as well as people inside the room here.

Please limit your presentation to five minutes so that everyone has an opportunity to speak. If you go over the time limit, you will be asked to conclude your comments.

If you need more time to submit your comments, please submit them to us in writing.

If you do not want to make an oral statement today but you do want to provide input, you may do so in writing at this time and up until the end of the comment period which is the 2nd of

October, 2002. For your convenience, written comment sheets are available at the registration table for your use. We have placed a box next to the microphone where you can drop off written comments or you may mail your written comments to the address shown on the slip on the slide -- we don't have a slide. I apologize. But we can get that address to you. This address is also on the comments sheet.

Oral comments will be documented by the court reporter to ensure they are properly addressed in the official record of the ROD/RAP. Any comments that are made orally or that are provided in writing before the end of the comment period will be given equal consideration in the decision-making process.

In the final ROD/RAPs, a response will be give not to all comments that are received. If necessary, additional analysis will be performed and the ROD/RAPs will be changed

Concerning the comment period, we will now start the public comment portion of this meeting with a few administrative announcements. Please use the microphone so that we can hear you, speak clearly, and direct your comments to me. State

your name for the record before you begin. Again, please limit your comments to five minutes.

With that, if there is anybody who wishes to make public comments, this is your opportunity. Going once. Okay.

It appears that we do not have any public comments at this time. However, I do want to remind you, you certainly have the opportunity to fill out a comment card and provide that to us before your departure or provide it before the end of the comment period because we are interested in your comments

This concludes today's public meeting. If you should later decide to make additional comments, you may submit them in writing. Your comments must be post marked by the end of the comment period which is 2 October 2002.

Copies of the Draft Final ROD/RAPs are available at the local public libraries. If you wish to receive a copy of the Final ROD/RAPs, please indicate it on a comment sheet or send a written request to the same address.

We appreciate your participation in this public meeting Thank you for coming.

MS. KEPHART: We'll take a quick break now and

thank everybody for coming to the public meeting part. And we'll take a break for about 15 minutes. We've got some refreshments coming out and then we'll get started with the CAB meeting.

(Proceedings concluded at 10:30 a.m.)

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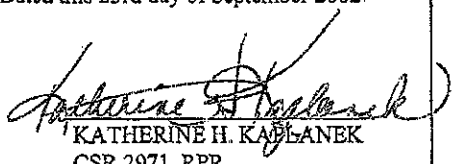
STATE OF CALIFORNIA)
) SS.
COUNTY OF SAN LUIS OBISPO)

I, Katherine H. Kaplanek, CSR 2971, Registered Professional Reporter, do hereby certify that pages 1 through 20 comprise a full, true and correct the transcript of the proceedings had in the within-entitled matter, verbatim recorded by me by stenotype on the dates and at the hours herein written, and thereafter reduced to computerized transcription under my direction.

In compliance with Section 8016 of the Business and Professions Code, I certify under penalty of perjury that I am a certified shorthand reporter, with license number 2971 in full force and effect.

Dated this 23rd day of September 2002.



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